

WHAT IS CLAIMED IS:

1. A disc loading-and-unloading structure for a disc apparatus comprising:
 - a drive motor;
- 5 a drive roll assembly comprising first and second drive rolls and, an intervening transmission gear wheel, and a rotatable arm plate, the first drive roll being rotatably fixed to a stationary stud axle standing upright on a chassis of the disc apparatus, next to one end of a disc slot made in the front of the apparatus, and the first drive roll being connected to the drive motor; the first and second drive rolls being fixed to the opposite ends of the rotatable arm plate with the intervening transmission gear wheel sandwiched therebetween;
- 10 a free-roll slider movably fixed to the chassis of the apparatus, next to the other end of the disc slot, the free-roll slider comprising first and second free rolls, and a slidable arm plate, the first and second free rolls being fixed to the opposite ends of the slidable arm plate;
- 15 a rotary lever rotatably fixed to the chassis on the rear side of the chassis so that its free end may abut a disc when being inserted from the disc slot and advancing toward the rear side in the apparatus;
- 20 a slider operatively connected to the rotary lever; and link-and-spring connection means for normally urging the free-roll slider toward the drive roll assembly, allowing the free-roll slider to move apart from the drive roll assembly as a counter action to hitting-and-pushing by the disc when inserted into the apparatus.
- 25 2. A disc loading-and-unloading structure according to claim 1, wherein the drive roll assembly, the free-roll slider and the rotary lever are adapted to work together and hold the disc on its circumference by applying the second drive roll, the second free roll and the free end of the rotary lever to three points on the circumference of the disc.
- 30 3. A disc loading-and-unloading structure according to claim 1, wherein further comprising a pinion connected to the drive motor,
 - the slider has a rack fixed thereon and a cam slot made on its rear side, the rack being placed toward the disc slot, extending rearward in the disc-carrying

direction; and the rotary lever has means for urging its free end toward the disc when advancing rearwards from the disc slot, and has a boss slidably fitted in the cam slot of the slider, whereby inclination of the rotary lever when being hit and pushed by the advancing disc makes the boss follow the contour of the cam slot,

5 thus making the pinion mesh with the rack, and allowing the rack and pinion to drive the slider rearward.

4. A disc loading-and-unloading structure according to claim 3, wherein the link-and-spring connection comprises a series link connection of first, second and third links articulated with each other, the first link being connected to the free-roll slider, the second link being articulated to the rotatable arm plate of the drive roll assembly, and the third link being rotatably fixed around a stationary stud axle, and being articulated both to the first and second links; the slider has a cam rib extending from its front edge; the drive roll assembly has a guide pin standing upright on the rotatable arm plate, which the guide pin being adapted to ride on the cam rib when the slider remains in the forward position, and depart from the cam rib when the slider is driven rearward, thus allowing the second drive roll, the second free roll and the free end of the rotary lever to depart from the circumference of the disc simultaneously.

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5. A disc loading-and-unloading structure according to claim 1, wherein further comprising start and stop switches, the start switch being responsive to the lateral movement of the free-roll slider for turning on, thus starting the drive motor, and the stop switch is responsive to arrival of the slider at the final rear position for turning off, thereby stopping the drive motor.

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